# AFCTN Test Report 94-035

**AFCTB-ID 93-069**
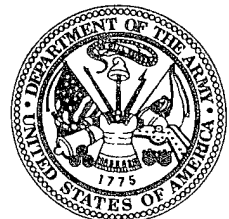
# Technical Publication Transfer

## Using:

## IBM SID, Boulder's Data

## MIL-M-28001A (SGML)
## MIL-R-28002A (Raster)
## MIL-D-28003 (CGM)

## Quick Short Test Report

### 09 July 1993

**Prepared for**

*Electronic Systems Center*

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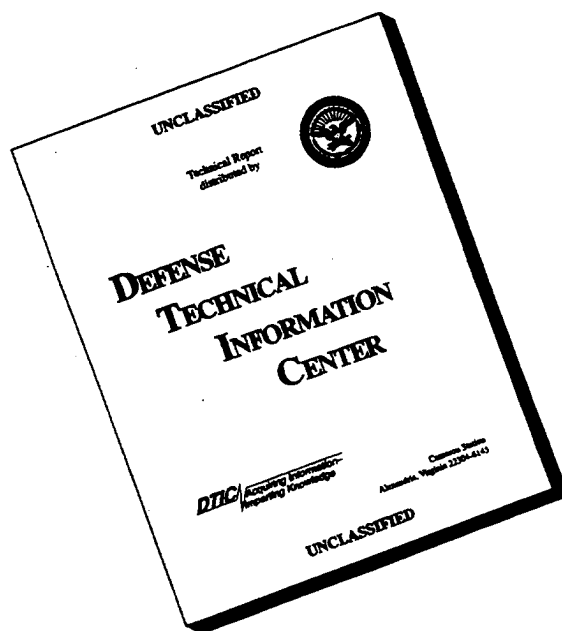Air Force CALS Test Bed
Wright-Patterson AFB, OH 45433

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# Contents

# 1. Introduction

## 1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards , interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the tests, and the results.

## 1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze IBM SID Boulder's interpretation and use of the CALS standards in transferring technical publication data. IBM SID used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

# 2. Test Parameters

Test Plan:                          AFCTB 93-069

Date of
Evaluation:                         09 July 1993

Evaluator:                          George Elwood
                                    Air Force CALS Test Bed
                                    DET 2 HQ ESC/AV-2P
                                    4027 Colonel Glenn Hwy
                                    Suite 300
                                    Dayton OH  45431-1672

Data
Originator:                         Ina Dickinson
                                    IBM SID Boulder
                                    685 Citadeo Drive
                                    Suite 400
                                    Colorado Springs, CO  80909
                                    (719) 570-5853
                                    (719) 570-2989 (FAX)

Data
Description:                        Technical Manual Test
                                        3 Document Declaration files
                                        3  Document Type Definitions (DTD)
                                        3  Text/Standard Generalized Markup Language
                                               (SGML) files
                                       18 Raster files
                                        8  Computer Graphics Metafile (CGM) files

Data
Source System:
                    1840
                             **HARDWARE**

                                    Unknown
                             **SOFTWARE**
                                    Unknown

                    Text/SGML
                             **HARDWARE**
                                    Unknown
                             **SOFTWARE**
                                    Unknown

Raster

**HARDWARE**

Unknown

**SOFTWARE**

Unknown

CGM

**HARDWARE**

Unknown

**SOFTWARE**

IBM *GDFCGM v89.257*
Software Publishing Corporation
(SPC) *Harvard Graphics v3.05*

**Evaluation Tools Used:**

**MIL-STD-1840A (TAPE)**

SUN 3/280

AFCTN *Tapetool v1.2.9 UNIX*
XSoft *CAPS/CALS v40.4*

PC 486/50

AFCTN *Tapetool v1.2.9 DOS*

**MIL-M-28001 (SGML)**

PC 486/50

Datalogics *ParserStation v3.36*
Exoterica *XGMLNormalizer v1.2e3.2*
Exoterica *Validator v2.0 EXL*
McAfee & McAdam *Sema Mark-it v2.3*
Public Domain *sgmls*

**MIL-R-28002 (Raster)**

SUN SparcStation 2

ArborText *g42tiff*
Carberry *CADLeaf Plus v3.1*
AFCTN *validg4*
AFCTN *calstb.475*
IGES Data Analysis (IDA) *IGESView v3.0*
Island Graphics *IslandPaint v3.0*

PC 486/50

AFCTN *validg4*
IDA *IGESView Windows*
Inset Systems *HiJaak v2.1*
Inset Systems *HiJaak Window v1.0*
Corel *Ventura Publisher*

**MIL-D-28003 (CGM)**

SUN SparcStation 2

ArborText *cgm2draw*

Island Graphics *IslandDraw v3.0*

Carberry *CADLeaf Plus v3.1*

PC 486/50

Advance Technology Center
(ATC) *MetaView R 1.12*

ATC *MetaCheck R 2.05*

Software Publishing Corporation
(SPC) *Harvard Graphics v3.05*

Inset Systems *HiJaak v1.0 Windows Pro*

Micrografx *Designer 3.1*

Corel *Ventura Publisher*

**Standards
Tested:**

MIL-STD-1840A

MIL-M-28001A

MIL-R-28002A

MIL-D-28003

# 3.  1840A Analysis

## 3.1  External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier material as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed a label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

## 3.2  Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

## 3.2.1  Tape Formats

The tape was run through the AFCTN *Tapetool v1.2.9* utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using the XSoft *CAPS read1840A* utility without any reported errors.

The tape was read using the AFCTN *Tapetool v1.2.10* beta utility without a reported error.

The physical structure of the tape meets the MIL-STD-1840A requirements.

## 3.2.2  Declaration and Header Fields

No errors were found in the Document Declaration file and data file headers. This portion of the tape meets the CALS MIL-STD-1840A requirments.

## 4.  IGES Analysis

No Initial Graphics Exchange Specification (IGES) files were included on this tape.

## 5.  SGML Analysis

The tape contained three (3) DTD and Text files. The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

The Text and DTD files from the tape were evaluated using Datalogics' *ParseStation*, with no reported errors.

The Text and DTD files were evaluated using Exoterica's *Validator exl* parser, with no reported errors.

The Text and DTD files were tested using Exoterica's *XGML-Normalizer*, with no reported errors.

The Text and DTD files were evaluated using McAfee & McAdam's *Sema Mark-it* parser, with no reported errors.

The Text and DTD files were evaluated using the Public Domain *sgmls* parser, with no reported errors.

The SGML files meet the CALS MIL-M-28001A specification.

# 6. Raster Analysis

The tape contained 18 Raster files. All files were evaluated using the AFCTN *validg4* utility. This program reported that all 18 files meet the CALS MIL-R-28002A specifications.

The files were read into the AFCTN *calstb.475* viewing utility. No problems were noted.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were converted using ArborText's *g42tiff* utility without a reported error. The resulting files were read into Island Graphics' *IslandPaint*, displayed and printed.

The Raster files were read into Carberry's *CADLeaf* software without a reported error. They displayed without a problem, and a sample was printed.

The files were read into IDA's *IGESView* and *IGESView for Windows* without a reported error. They displayed without a problem, and a sample was printed.

The files were read into Inset Systems' *HiJaak for Windows* without a reported error and were displayed.

Even though the files were successfully imported, displayed, and in some cases printed, errors were noted in the actual information. The errors were probably generated during the conversion from CGM to Raster images. According to Ina Dickinson of IBM SID, Boulder, "The Rasters were generated from converting CGMs from a non-IBM graphics program." On files R008, R009, R010, R011, R012, R013, and R019 the text displayed in different size letters. File R011 also had missing vertical lines. See the Appendix for samples of these files.

The Raster files meet the CALS MIL-R-28002A specification, but have data acceptance problems.

# 7. CGM Analysis

The tape contained eight CGM files. The files were evaluated using ATC's *MetaCheck* with CALS options. All eight files were reported as meeting the CALS MIL-D-28003 specification. All files except C004, C009 and C011 had warning notes issued.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor and indication of CALS capability. All operations were performed using the default settings.

The CGM files were converted using ArborText's *cgm2draw* utility without a reported error. The resulting files were read into Island Graphics' *IslandDraw*, displayed and printed.

The files were viewed using ATC's *MetaView* software. The background color of some images made them unusable.

The files were read into Carberry's *CADLeaf* software and displayed without a reported error. Files C004, C008, C009, and C010 required the background color to be changed in order to see the image.

The files were read into Inset Systems' *HiJaak for Windows* without a reported error. File C011 required a background color change to view the image.

The files could not be imported directly into Island Graphics' *IslandDraw* because of hard drive memory limitation.

The files were imported into the Micrografx *Designer* without a reported error. File C006 required the background color to be changed in order to display the image, and files C005 and C010 did not display.

According to Michael Harrison of Micrografx, "The version of Micrografx Designer used with this report has been replaced with Designer version 4.0 which reads and prints these files successfully."

The files were imported into SPC's *Harvard Graphics v3.05* without a reported error. A background color change was required, due to black on black combinations, for those files defined in the CADleaf evaluation.

The files were imported into Corel's *Ventura Publisher* without a reported error. Background color problems made some of the images unusable. They displayed and printed as a blank sheet of paper.

Although the included CGM files meet the CALS MIL-D-28003 specification, problems with the background colors required many of the files to be modified in order to view and print.

## 8. Conclusions and Recommendations

The physical structure, CALS headers, and Document Declaration file of the tape from IBM SID Boulder meet the CALS MIL-STD-1840A requirements.

The SGML files on this tape meet the CALS MIL-M-28001A specification.

The Raster files on this tape meet the CALS MIL-R-28002A specification.

The CGM files on this tape meet the CALS MIL-D-28003 specification.  However, many of the included files had conflicts in the background color.  This required modifications to the files, in most software applications, in order to provide a usable image.

The tape submitted by IBM SID Boulder meets the CALS MIL-STD-1840A requirements.

# 9. Appendix A - Tapetool Report Logs

## 9.1 Tape Catalog

Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release 9 (O)

```
   Standards referenced:
     MIL-STD-1840A (1987) - Automated Interchange of Technical Information
     ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
                         for Information Interchange
     ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII
```

Thu Jul  8 14:03:10 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u129/Set022

Page: 1

| File Name<br>Extracted | File Type | Record<br>Format/<br>Selected/<br>Length | Block<br>Length/Total |
|---|---|---|---|
| D001<br>Extracted | Document Declaration | D/00260 | 02048/000001 |
| D002<br>Extracted | Document Declaration | D/00260 | 02048/000001 |
| D003<br>Extracted | Document Declaration | D/00260 | 02048/000001 |
| D001T001<br>Extracted | Text | D/00260 | 02048/000191 |
| D001G002<br>Extracted | DTD | D/00260 | 02048/000015 |
| D001R003<br>Extracted | Raster | F/00128 | 02048/000006 |

*<<<<< PART OF LOG FILE REMOVED HERE >>>>>*

```
D001R019                Raster              F/00128 02048/000007
Extracted D002T001              Text                  D/00260
02048/000024  Extracted D002G002        DTD
D/00260 02048/000015  Extracted D002C003          CGM
```

F/00080 00800/000210  Extracted D002C004                    CGM
F/00080 00800/000110  Extracted

<<<<< *PART OF LOG FILE REMOVED HERE* >>>>>

D002C011                    CGM                    F/00080 00800/000484
Extracted D003T001                    Text                    D/00260
02048/000015  Extracted D003G002                    DTD
D/00260 02048/000015  Extracted Catalog Process terminated normally.

# 9.2  Tape Evaluation Log

Air Force CALS Test Network Tape Evaluation - Version 1.2; Release 9 (O)
   Standards referenced:
      ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
                          for Information Interchange
      ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Thu Jul  8 14:01:38 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1CTN301                           INAD
4

   Label Identifier: VOL1
   Volume Identifier: CTN301
   Volume Accessibility:
   Owner Identifier: INAD
   Label Standard Version: 4

HDR1D001              CTN30100010001000100 93182 93182 000000

   Label Identifier: HDR1
   File Identifier: D001
   File Set Identifier: CTN301
   File Section Number: 0001
   File Sequence Number: 0001
   Generation Number: 0001
   Generation Version Number: 00
   Creation Date:  93182
   Expiration Date:  93182
   File Accessibility:
   Block Count: 000000
   Implementation Identifier:

HDR2D0204800260                            00

   Label Identifier: HDR2
   Recording Format: D
   Block Length: 02048
   Record Length: 00260

Offset Length: 00

************ Tape Mark ***************

 Actual Block Size Found = 2048 Bytes.

 Number of data blocks read = 1.

************ Tape Mark ***************

EOF1D001                CTN30100010001000100 93182 93182 000001

  Label Identifier: EOF1
  File Identifier: D001
  File Set Identifier: CTN301
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0001
  Generation Version Number: 00
  Creation Date:  93182
  Expiration Date:  93182
  File Accessibility:
  Block Count: 000001
  Implementation Identifier:

EOF2D0204800260                                        00

  Label Identifier: EOF2
  Recording Format: D
  Block Length: 02048
  Record Length: 00260
  Offset Length: 00

************ Tape Mark ***************

               <<<<< *PART OF LOG FILE REMOVED HERE* >>>>>

************ Tape Mark ***************

############ End of Volume CTN301 #############

############ End Of Tape File Set #############

Deallocating /dev/rmt0...

Tape Import Process terminated normally.

# 9.3 Tape File Set Validation Log

Air Force CALS Test Network File Set Evaluation - Version 1.2; Release 9 (O)

  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Thu Jul  8 14:03:10 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set022

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: IBM, Federal Systems Division, Boulder, CO 80301-9191
srcdocid: CRLTEST SGMLRSLV
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19920904
dstsys: AFCTN, Wright-Patterson AFB, OH 45433
dstdocid: SSD-CSOC-00038C
dstrelid: NONE
dtetrn: 19930701
dlvacc: REVIEW COPY
filcnt: T1, G1, R17
ttlcls: Unclassified
doccls: Unclassified
doctyp: COMPUTER RESOURCES LIFE-CYCLE MANAGEMENT PLAN
docttl: CSOC COMPUTER RESOURCES LIFE-CYCLE MANAGEMENT PLAN (CRLCMP)

Found file: D001T001
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: CRLTEST SGMLRSLV
dstdocid: SSD-CSOC-00038C
txtfilid: W
doccls: Unclassified
notes: NONE

Saving Text Header File: D001T001_HDR
Saving Text Data File: D001T001_TXT

Found file: D001G002
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: CRLTEST SGMLRSLV
dstdocid: SSD-CSOC-00038C
notes: NONE

Saving DTD Header File: D001G002_HDR
Saving DTD Data File: D001G002_DTD

Found file: D001R003
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: CRLTEST SGMLRSLV
dstdocid: SSD-CSOC-00038C
txtfilid: W
figid: 5-1
srcgph: CRR
doccls: NONE
rtype: 1
rorient: 000,270
rpelcnt: 001408,001888
rdensty: 0240
notes: NONE

Saving Raster Header File: D001R003_HDR
Saving Raster Data File: D001R003_GR4

<<<<< *PART OF LOG FILE REMOVED HERE* >>>>>

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

Found file: D002
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: IBM, Federal Systems Company, Boulder, CO 80301-9191

```
srcdocid: SYSTEST SGMLRSLV
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19920320
dstsys: Air Force CALS Test Network, Wright-Patterson AFB, OH 45433
dstdocid: 31S5-4-3694-1
dstrelid: NONE
dtetrn: 19930701
dlvacc: NONE
filcnt: T1, G1, C8, R1
ttlcls: Unclassified
doccls: Unclassified
doctyp: SYSTEM MANUAL
docttl: CSOC SATELLITE OPERATIONS COMPLEX/NETWORK CONTROL SEGMENT (SOC/NCS)

Found file: D002T001
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: SYSTEST SGMLRSLV
dstdocid: 31S5-4-3694-1
txtfilid: W
doccls: Unclassified
notes: NONE

Saving Text Header File: D002T001_HDR
Saving Text Data File: D002T001_TXT

Found file: D002G002
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: SYSTEST SGMLRSLV
dstdocid: 31S5-4-3694-1
notes: NONE

Saving DTD Header File: D002G002_HDR
Saving DTD Data File: D002G002_DTD

Found file: D002C003
Extracting CGM Header Records...
Evaluating CGM Header Records...

srcdocid: SYSTEST SGMLRSLV
dstdocid: 31S5-4-3694-1
txtfilid: W
figid: 1-1
```

srcgph: SYS1006P
doccls: Unclassified
notes: NONE

Saving CGM Header File: D002C003_HDR
Saving CGM Data File: D002C003_CGM

<<<<< *PART OF LOG FILE REMOVED HERE* >>>>>

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D002.

Found file: D003
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: IBM, Federal Systems Division, Boulder, CO 80301-9191
srcdocid: ILSPMSTR SGMLRSLV
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19900415
dstsys: Air Force CALS Test Network, Wright-Patterson AFB, OH 45433
dstdocid: CSOC-ILSP-1
dstrelid: NONE
dtetrn: 19930701
dlvacc: ORIGINAL
filcnt: T1, G1
ttlcls: Unclassified
doccls: Unclassified
doctyp: INTEGRATED LOGISTICS SUPPORT PLAN
docttl: CONSOLIDATED SPACE OPERATIONS CENTER INTEGRATED LOGISTICS SUPPORT
PLAN

Found file: D003T001
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: ILSPMSTR SGMLRSLV
dstdocid: CSOC-ILSP-1
txtfilid: W

doccls: Unclassified
notes: NONE

Saving Text Header File: D003T001_HDR
Saving Text Data File: D003T001_TXT

Found file: D003G002
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: ILSPMSTR SGMLRSLV
dstdocid: CSOC-ILSP-1
notes: NONE

Saving DTD Header File: D003G002_HDR
Saving DTD Data File: D003G002_DTD

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D003.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

# 10.   Appendix B - Detailed SGML Analysis

## 10.1   Exotercia Validator exl

```
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Warning** in "9369-1.sgm", line 521:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "NOMEN".
                                                ftnote*) >
                                                   ^

-->
<!-- **Warning** in "9369-1.sgm", line 592:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "NOTICE".
   <!ELEMENT notice - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                    ^

-->
<!-- **Warning** in "9369-1.sgm", line 609:
   An element with mixed content should  permit data characters ("#PCDATA")
   everywhere.
   The element being declared is   "PHRASE".
   <!ELEMENT phrase - o (((%text1; | %text2;)*, ftnote*)) >
                                                    ^

-->
<!-- **Warning** in "9369-1.sgm", line 613:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "OADR".
   <!ELEMENT oadr - o (((%text1; | %text2;)*, ftnote*)) >
                                                  ^

-->
<!-- **Warning** in "9369-1.sgm", line 682:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "ITEM".
   <!ELEMENT item - o (((%text1; | %text2;)*, ftnote*), (%list;)?) >
                                                 ^
```

```
-->
<!-- **Warning** in "9369-1.sgm", line 695:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   <!ELEMENT term - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                ^

-->
<!-- **Warning** in "9369-1.sgm", line 699:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "INTLSTAN".
   <!ELEMENT intlstan - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                    ^

-->
<!-- **Warning** in "9369-1.sgm", line 707:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "PURPOSE".
   <!ELEMENT purpose - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                   ^

-->
<!-- **Warning** in "9369-1.sgm", line 711:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "SIGNER".
   <!ELEMENT signer - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                 ^

-->
<!-- **Warning** in "9369-1.sgm", line 761:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "PRECAUT".
   <!ELEMENT precaut - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                   ^

-->
<!-- **Warning** in "9369-1.sgm", line 831:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "TITLE".
   <!ELEMENT title - o (((%text1; | %text2;)*, ftnote*)) -(table | figure | ch
                                                 ^
```

```
-->
<!-- **Warning** in "9369-1.sgm", line 835:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "DEF".
   <!ELEMENT def - o (((%text1; | %text2;)*, ftnote*) | paratext | table) >
                                                ^

-->
<!-- **Warning** in "9369-1.sgm", line 839:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "PARATEXT".
   <!ELEMENT paratext - o (((%text1; | %text2;)*, ftnote*)) >
                                                   ^

-->
<!-- **Warning** in "9369-1.sgm", line 843:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "PARA".
   <!ELEMENT para - o (((%text1; | %text2;)*, ftnote*) | %spcpara;) +(figure |
                                               ^

-->
<!-- **Warning** in "9369-1.sgm", line 891:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "ENTRY".
   <!ELEMENT entry - o (((%text1; | %text2;)*, ftnote*) | %spcpara; | paratext
                                               ^

-->
<!-- **Warning** in "9369-1.sgm", line 953:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "FTNOTE".
   <!ELEMENT ftnote - - (((%text1; | %text2;)*, ftnote*) | %list; |
                                                ^

-->
<!-- **Warning** in "9369-1.sgm", line 960:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "INDXFLAG".
   <!ELEMENT indxflag - - (((%text1; | %text2;)*, ftnote*)) >
                                                  ^
```

```
-->
<!-- **Warning** in "9369-1.sgm", line 1036:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "LIN".
   <!ELEMENT lin - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                ^

-->
<!-- **Warning** in "9369-1.sgm", line 1040:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "FIGINDEX".
   <!ELEMENT figindex - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                    ^

-->
<!-- **Warning** in "9369-1.sgm", line 1044:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "REFDES".
   <!ELEMENT refdes - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                  ^

-->
<!-- **Warning** in "9369-1.sgm", line 1052:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "PARTDESC".
   <!ELEMENT partdesc - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                    ^

-->
<!-- **Warning** in "9369-1.sgm", line 1060:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "SSSN".
   <!ELEMENT sssn - o ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                ^

-->
<!-- **Warning** in "9369-1.sgm", line 1072:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "MATERIAL".
   <!ELEMENT material - - ((#PCDATA | %asyntxt;)*, ftnote*) >
                                                    ^
```

```
-->
<!-- **Warning** in "9369-1.sgm", line 1094:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "SUBSCRPT".
   <!ELEMENT subscrpt - - ((#PCDATA | %asyntxt;)*, subscrpt?, supscrpt?) >
                                                                        ^

-->
<!-- **Warning** in "9369-1.sgm", line 1098:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "SUPSCRPT".
   <!ELEMENT supscrpt - - ((#PCDATA | %asyntxt;)*, subscrpt?, supscrpt?) >
                                                                        ^

-->
<!-- **Warning** in "9369-1.sgm", line 10351:
   There is no element with an IDREF or IDREFS attribute value equal to a
   specified ID value.
   The unreferenced ID attribute value is "TAB54".
-->
<!-- 26 warnings reported. -->
```

# 11. Appendix C - Detailed Raster Analysis

## 11.1  File D001R009

### 11.1.1  Output IGESView

RISK ITEM SUBMITTAL (RIS) (Instructions on reverse side)

| 1. ORIGINATOR | 2. ORGANIZATION | 3. TELEPHONE |
|---|---|---|

4. RISK IDENTIFIER

| 5. RISK IMPACTS | ☐ PROGRAM | ☐ PROJECT | ☐ COST |
|---|---|---|---|
| ☐ PROGRAMMATICS | ☐ TECHNICAL | ☐ SCHEDULE | ☐ PROFIT |

6. RISK DESCRIPTION

7. RISK ASSESSMENT

## 11.1.2 Output CADleaf

**RISK ITEM SUBMITTAL (RIS) (Instructions on reverse side)**

**1. ORIGINATOR:**

**2. ORGANIZATION:**

**3. TELEPHONE:**

**4. RISK IDENTIFIER:**

**5. RISK IMPACTS:**
- [ ] PROGRAMMATICS
- [ ] PROGRAM
- [ ] TECHNICAL
- [ ] PROJECT
- [ ] SCHEDULE
- [ ] COST
- [ ] PROFIT

**6. RISK DESCRIPTION**

**7. RISK ASSESSMENT:**

# 12.  Appendix E - Detailed CGM Analysis

## 12.1  File D002C003

## 12.1.1  Parser Log MetaCheck

```
MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 07/08/93    Time:  16:09:22

Metafile Examined    : i:\9369\c003.cgm

Pictures Examined    : All
Elements Examined    : All
Bytes    Examined    : All


======================= Trace Report =======================

Tracing not selected.

============= CGM Conformance Violation Report ==============

Bulletin 20009: Element Class/ID: 4/1   Offset: 60310 octets Element No. 5904
Warning; POLYLINE with only one distinct vertex.


                <<<<< PART OF LOG FILE REMOVED HERE >>>>>

Bulletin 20009: Element Class/ID: 4/1   Offset: 164156 octets Element No.
14641
Warning; POLYLINE with only one distinct vertex.

========== CALS CGM Profile (MIL-D-28003) Report ============

No profile discrepancies detected.

================ Conformance Summary Report ================

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 07/08/93    Time:  16:09:52

Name of CGM under test: i:\9369\c003.cgm
Encoding               : Binary
```

Pictures Examined   : All
Elements Examined   : All
Bytes    Examined   : All

BEGIN METAFILE string : "GDFCGM/CGMPUT 89.257"
METAFILE DESCRIPTION  : " IBM ADMGDF->CGM:MIL-D-28003/BASIC-1"

Picture 1 starts at octet offset 108; string contains: "Picture 1"

Conformance Summary  :  This file conforms to the CGM specification.
                        This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

        1 Pictures Tested
    14861 Elements Tested
   167098 Octets Tested

    0 Illegal CGM Elements                      1000 -   1999
    0 Incorrect CGM Element Lengths             2000 -   2999
    0 CGM State Errors                          3000 -   3499
    0 Required CGM Elements Missing or Wrong    4000 -   4499
    0 CGM Parameter Values Out of Range         6000 -   6499
    0 CGM Structure Errors                      7000 -   7499
    0     ***     CGM Errors Found (total)    ***

    0 Profile State Errors                      3500 -   3999
    0 Illegal Profile Elements                  4500 -   4999
    0 Profile Parameter Values Out of Range     6500 -   6999
    0 Profile Data Limits Exceeded              8500 -   8999
    0 Other Profile Constraints Violated        9500 -   9999
    0     *** Profile Violations Found (total) ***

   15 Warnings (Advisory Remarks)              20000 -  20999

    1 distinct errors and warnings were reported.

=============== End of Conformance Report ==================

## 12.1.2 Output Designer

## 12.1.3 Output Harvard Graphics

## 12.1.4  Output HiJaak for Windows
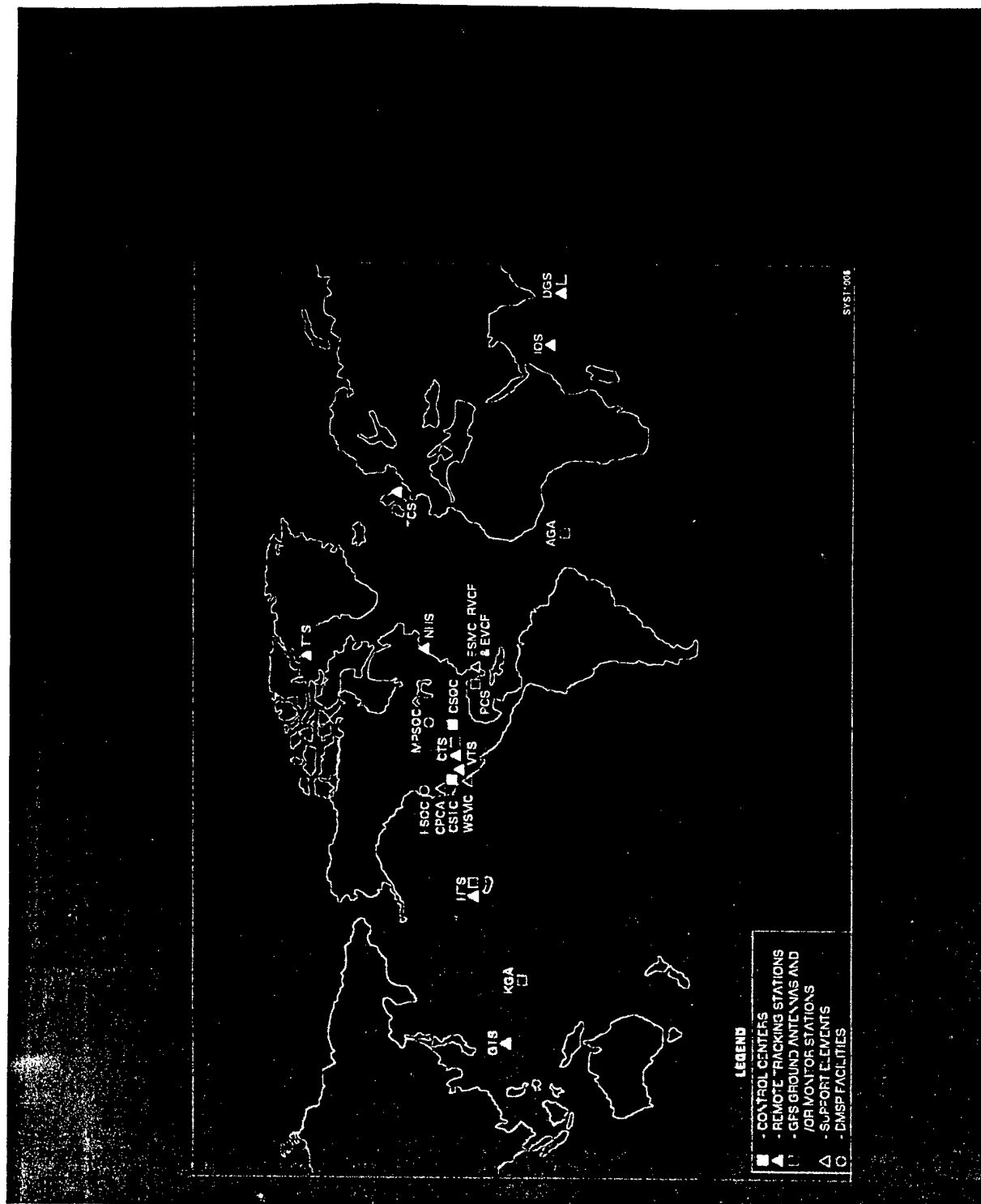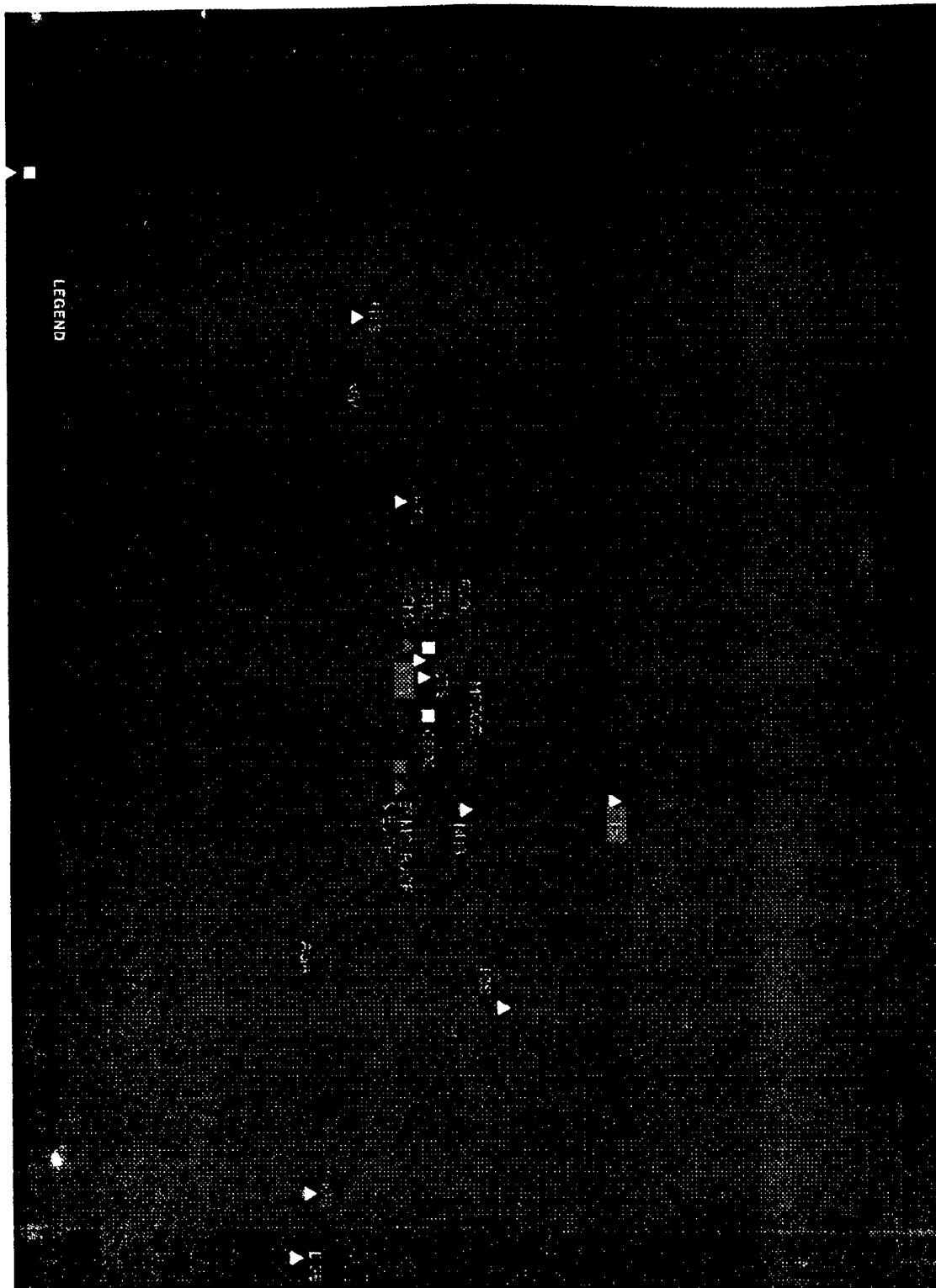
## 12.1.5 Output cgm2draw/IslandDraw

## 12.1.6  Output Ventura Publisher

TTS

◄
■

VIS
◄

## 12.2   File D002C010

## 12.2.1   Parser Log MetaCheck

```
MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 07/08/93     Time:  16:11:49


Metafile Examined     : i:\9369\c010.cgm

Pictures Examined     : All
Elements Examined     : All
Bytes     Examined     : All


====================== Trace Report ======================

Tracing not selected.

============= CGM Conformance Violation Report =============

Bulletin 20009: Element Class/ID: 4/1   Offset: 18650 octets Element No. 1875
Warning; POLYLINE with only one distinct vertex.


               <<<<< PART OF LOG FILE REMOVED HERE >>>>>

Bulletin 20009: Element Class/ID: 4/1   Offset: 79766 octets Element No. 7989
Warning; POLYLINE with only one distinct vertex.

========== CALS CGM Profile (MIL-D-28003) Report ============

No profile discrepancies detected.

================ Conformance Summary Report ================

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-91 CGM Technology Software
Execution Date: 07/08/93     Time:  16:12:19

Name of CGM under test: i:\9369\c010.cgm
Encoding                : Binary

Pictures Examined     : All
Elements Examined     : All
Bytes     Examined     : All
```

BEGIN METAFILE string : "METAFILE.CGM"
METAFILE DESCRIPTION  : "Harvard v3.05 CGM MIL-D-28003/BASIC-1"

Picture 1 starts at octet offset 110; string contains: "PICTURE 0"

Conformance Summary  :  This file conforms to the CGM specification.
                        This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

        1 Pictures Tested
    16690 Elements Tested
   166734 Octets Tested

     0 Illegal CGM Elements                       1000 -   1999
     0 Incorrect CGM Element Lengths              2000 -   2999
     0 CGM State Errors                           3000 -   3499
     0 Required CGM Elements Missing or Wrong     4000 -   4499
     0 CGM Parameter Values Out of Range          6000 -   6499
     0 CGM Structure Errors                       7000 -   7499
     0    ***     CGM Errors Found (total)    ***

     0 Profile State Errors                       3500 -   3999
     0 Illegal Profile Elements                   4500 -   4999
     0 Profile Parameter Values Out of Range      6500 -   6999
     0 Profile Data Limits Exceeded               8500 -   8999
     0 Other Profile Constraints Violated         9500 -   9999
     0    *** Profile Violations Found (total) ***

     5 Warnings (Advisory Remarks)               20000 -  20999

     1 distinct errors and warnings were reported.

================ End of Conformance Report ==================

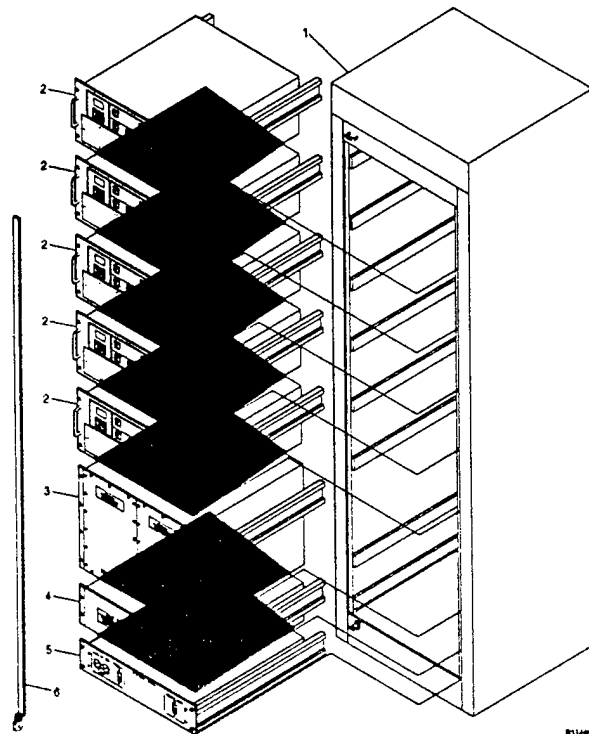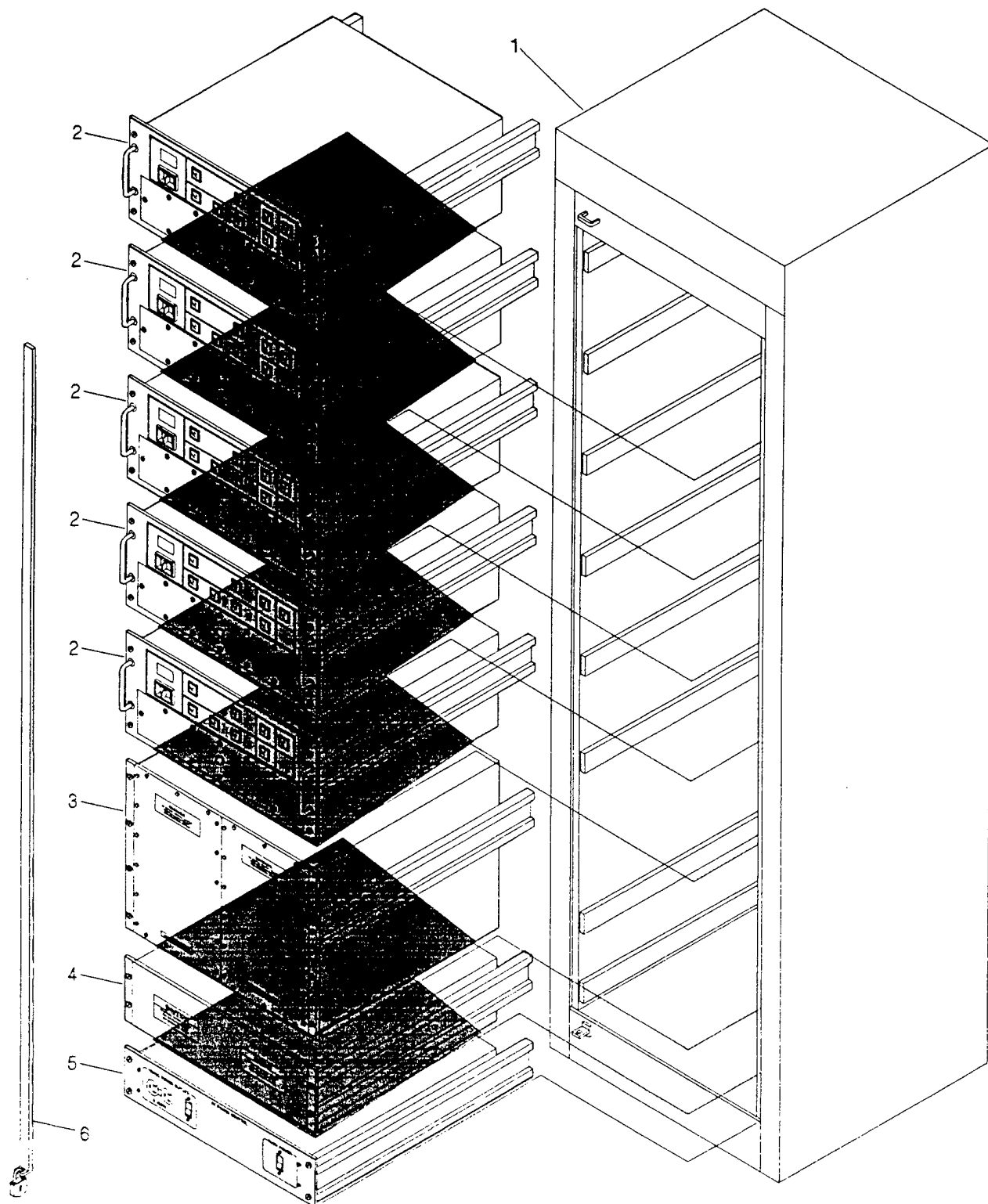## 12.2.2  Output Harvard Graphics
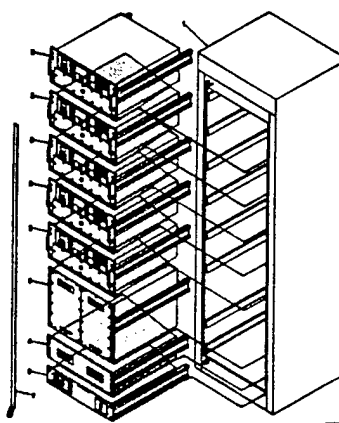
## 12.2.3  Output HiJaak for Windows
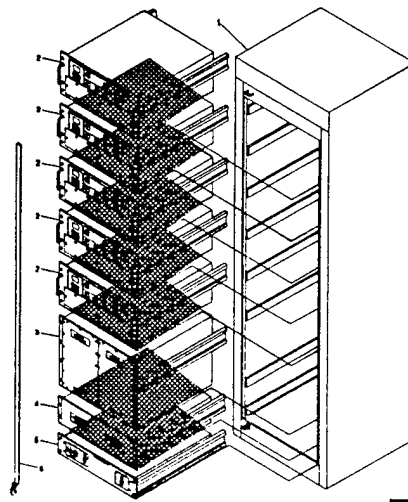
## 12.2.4   Output cgm2draw/IslandDraw

## 12.2.5   Output Ventura Publisher



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